

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification n⁷ : C12N 15/53, 9/02, 1/21, 15/01, C12P 7/02 // (C12N 9/02, C12R 1:40) (C12N 9/02, C12R 1:11) (C12N 1/21, C12R 1:19)		A2	(11) International Publication Number: WO 00/31273
			(43) International Publication Date: 2 June 2000 (02.06.00)
(21) International Application Number: PCT/GB99/03873			(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 19 November 1999 (19.11.99)			
(30) Priority Data: 9825421.2 19 November 1998 (19.11.98) GB			
(71) Applicant (for all designated States except US): ISIS INNOVATION LIMITED [GB/GB]; Ewert House, Ewert Place, Summertown, Oxford OX2 7BZ (GB).			
(72) Inventors; and (75) Inventors/Applicants (for US only): WONG, Luet, Lok [GB/GB]; University of Oxford, Dept. of Chemistry, South Parks Road, Oxford OX1 3QR (GB). BELL, Stephen, Graham [GB/GB]; University of Oxford, Dept. of Chemistry, South Parks Road, Oxford OX1 3QR (GB). CARMICHAEL, Angus, Bishop [GB/GB]; University of Oxford, Dept. of Chemistry, South Parks Road, Oxford OX1 3QR (GB).			
(74) Agent: ELLIS-JONES, Patrick, George, Armine; J.A. Kemp & Co., 14 South Square, Gray's Inn, London WC1R 5LX (GB).			Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: PROCESS FOR OXIDISING TERPENES			
(57) Abstract <p>A process for oxidising a substrate which is an acyclic or cyclic terpene, or a cycloalkene; or a substituted derivative thereof, which process comprises oxidising said compound with a mutant haem-containing enzyme, the mutant comprising the substitution of an amino acid in the active site by an amino acid with a less polar side-chain. The enzyme is typically P450_{cam} or P450_{BM-3}. Cells and libraries of cells in which the process can be carried out or which can be used to select advantageous mutant enzymes are also provided.</p>			

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon		Republic of Korea	PT	Portugal		
CN	China	KR	Republic of Korea	RO	Romania		
CU	Cuba	KZ	Kazakstan	RU	Russian Federation		
CZ	Czech Republic	LC	Saint Lucia	SD	Sudan		
DE	Germany	LI	Liechtenstein	SE	Sweden		
DK	Denmark	LK	Sri Lanka	SG	Singapore		
EE	Estonia	LR	Liberia				